

U.S. Serial No. 10/667,262

Attorney Docket No. 2003P08879US

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the present application.

1. (Currently Amended) A method of acoustic thermography for enhancing detection of a flaw in a specimen, said flaw of a type characterized by a void defined by mutually opposite, spaced apart surface edges, said method comprising:

applying a material to a specimen to be tested, the material being thermally responsive to acoustic energy transmitted to the specimen by an acoustic thermography system due to vibratory movement imparted to said material when engaged by the spaced apart surface edges that define the void in the specimen; and

processing a thermal response of the material when acoustic energy is applied to the specimen by the acoustic thermographic system, wherein the movement imparted to said material by said spaced apart surface edges enables to generate a sufficiently intense thermal response notwithstanding that the flaw is of a type characterized by a void with spaced apart surface edges.

2. (Original) The method of claim 1 wherein the processing step comprises: collecting data indicative of a thermal response of the material when the acoustic energy is applied; and

correlating the thermal response of the material to an amount of acoustic energy applied to the specimen.

3. (Original) The method of claim 2 further comprising comparing the amount of acoustic energy applied to the specimen to a desired amount necessary for inspecting the specimen.

4. (Original) The method of claim 3 further comprising generating an indication of whether or not the amount of acoustic energy applied to the specimen appropriately meets the desired amount of acoustic energy for inspecting the specimen.

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5. (Original) The method of claim 1 wherein the material comprises an adhesive tape.

6. (Original) The method of claim 1 wherein the material is selected from the group consisting of fluids, plastic foams, viscoelastic materials, powders, gases convertible into liquids, liquid-impregnated solids, and semi-solids.

7. (Currently Amended) The method of claim 1 wherein the processing step comprises:

collecting data indicative of a thermal response of the material when the acoustic energy is applied; and

correlating the thermal response of the material to determine whether a the flaw is present in the specimen.

8. (Original) The method of claim 7 wherein the applying step comprises:
applying a liquid form of the material; and
wiping off excess liquid material from the specimen.

9. (Currently Amended) The method of claim ~~7~~8 wherein the liquid is drawn into the flaw by capillary and/or surface tension forces.

10. (Currently Amended) The method of claim 7 wherein the applying step comprises applying a coating of the material to a portion of the specimen suspected of including the flaws.

11. (Currently Amended) The method of claim 7 wherein the applying step comprises applying an adhesive tape to a portion of the specimen suspected of including the flaws.

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12. (Currently Amended) An acoustic thermography apparatus for enhancing detection of a flaw in a specimen, said flaw of a type characterized by a void defined by mutually opposite, spaced apart surface edges, said apparatus comprising:

an acoustic energy source for imparting acoustic energy into a specimen to be inspected;

a material adapted for application to the specimen for producing a thermal response to acoustic energy imparted to the specimen due to vibratory movement imparted to said material when engaged by the spaced apart surface edges that define the void in the specimen; and

a sensor for detecting the thermal response of the material, wherein the movement imparted to said material by said spaced apart surface edges enables to generate a sufficiently intense thermal response notwithstanding that the flaw is of a type characterized by a void with spaced apart surface edges.

13. (Original) The apparatus of claim 12 wherein the material comprises an adhesive tape.

14. (Original) The apparatus of claim 12 wherein the material comprises one of the group consisting of fluids, plastic foams, viscoelastic materials, powders, gases convertible into liquids, liquid-impregnated solids and semi-solids.

15. (Original) The apparatus of claim 12 further comprising a plurality of pieces of the material for application to a selected plurality of locations on the specimen.